

implementable) would be subject to many of the same disadvantages set forth in the background section of Applicant's application. Consequently, Applicant respectfully traverses the rejections and requests allowance of all claims.

According to M.P.E.P. § 2143, in order to establish a prima facie case of obviousness of a claimed invention by applying a combination of references, the proposed combination must teach or suggest all of the elements of the claimed invention. Applicants submit that the proposed combination of Corbefin et al. with Sinivaara fails to teach or suggest at least the function of a signal pathway linking an external antenna to a cabin antenna, where at least a portion of the signal pathway includes a low energy transmission medium.

This function is expressed in various wording in the pending claims. For instance, independent claim 1 recites the element of "a signal pathway linking the external antenna to the cabin antenna, wherein at least a portion of the signal pathway includes at least one low-energy transmission medium."

Similarly, independent claim 7 recites the elements of "converting the at least one incoming external signal into at least one incoming low-energy signal," "conveying the at least one incoming low-energy signal across a low-energy transmission medium," and "converting the at least one incoming low-energy signal into at least one internal incoming signal."

Independent claim 15 calls for "converting the at least one outgoing internal signal into at least one outgoing low-energy signal," "conveying the at least one outgoing low-energy signal across a low-energy transmission medium," and "converting the at least one outgoing low-energy signal to at least one outgoing external signal."

Finally, independent claim 23 recites “a first converter operable to convert the incoming external signal to an incoming optical signal and to convert an outgoing optical signal to the outgoing external signal,” a second converter “operable to convert the incoming optical signal into an incoming internal signal” and to “convert [an] outgoing internal signal to the outgoing optical signal,” a cabin antenna “operable to transmit the incoming internal signal to a wireless handset located in the passenger compartment [of an aircraft] and to receive [the] outgoing internal signal from the wireless handset,” and “at least one fiber optic cable operable to convey the incoming optical signal from the first converter to the at least one cabin antenna unit and to convey the outgoing optical signal from the at least one cabin antenna unit to the first converter.”

Corbefin et al. discloses a device including a transponder having a central unit and means of authority, along with first and second antennae to allow the use of the radiocommunication means on an aircraft. The central unit and means of authority act, on the basis of power-matching, to “[compel] a radiocommunication means to operate at reduced power and for controlling the operation thereof.” (*See, e.g., Corbefin et al., col. 2, lines 27-33.*) As a result, the device, in essence, assumes at least some control over a passenger’s radio communication means. As recognized by the Examiner, Corbefin et al. does not disclose a signal pathway linking the external antenna to the cabin antenna, with at least a portion of the signal pathway including at least one low-energy transmission medium. (*See Jan. 23<sup>rd</sup> Office Action, page 2, item 2.*)

Sinivaara, on the other hand, discloses an aeronautical cellular network similar to those described in the Background of Applicant's disclosure. In particular, Sinivaara teaches an entire base station implemented on the aircraft, including a Base Transceiver Station (BTS) 22 and master unit 26, as shown in FIGs. 2-4 and described in the accompanying text. The BTS 22 is

linked to an Aeronautical Earth Station (AES) by a conventional Abis link. Screened coaxial cable provides connections between the BTS 22 and master unit 26, and also between each transducer unit 30 and each user terminal. The network taught by Sinivaara is a satellite-based system, and connections within the aircraft are entirely hard-wired. Sinivaara does not disclose a wireless implementation, and instead sets forth a scheme in which a SIM card is inserted into each user terminal. A wire connects the user terminal (with SIM card) to the particular transducer unit associated with the user terminal. (See Sinivaara, col. 3, lines 19-26.) The stated purpose of Sinivaara's network is "to avoid interference with radio frequency signals between user telephones and the Base Transceiver Station 22." (See Sinivaara, col. 2, lines 34-36.) Of note is Sinivaara's teaching that each specific group of BTS 22 in a plurality of aircraft has one or more dedicated Base Station Controllers (BSC) 17 on the ground to facilitate satellite communications.

Contrary to the Examiner's assertion on page 2, item 2 of the Jan. 23<sup>rd</sup> Office Action, Sinivaara does not even teach a cabin antenna, let alone a signal pathway linking the external antenna to such a cabin antenna. Thus, at least this claim element has not been established. Moreover, the Examiner's stated motivation to combine, "in order to avoid interference with radio frequency signals between user telephones and the base transceiver station," does not account for the absence of any discussion of such a base transceiver station in Corbefin et al. While Corbefin et al. teaches a transponder 4 having limited intelligence to control transmit-power for radiocommunication means R, its limited disclosure does not specify whether a full-fledged base station is also included, as in Sinivaara and the patents cited in Applicant's background section.

With all due respect, Applicant submits that Sinivaara and Corbefin et al. teach away from such a combination. Corbefin et al. keeps track of the different transmit-power levels for each of the radiocommunication means R of the passengers, to adjust the power levels as needed. In contrast, Sinivaara states that "the distribution of seat positions within an aircraft makes it **impossible** to have equal signal distribution from a plurality of user locations within the aircraft to a common Base Transceiver Station (BTS) which may form part of the communication path to the exterior of the aircraft." An indication of "impossibility" would likely dissuade a person of ordinary skill in the art from combining Sinivaara and Corbefin et al.

Further, if Corbefin et al were modified to have the optical interface system 25 of Sinivaara (which Applicant submits there is no suggestion to do), the system would not function wirelessly. Sinivaara teaches that "one end of the optical fibre system is connected to a master unit 26 which converts optical signals to radio frequency signals in both directions," while the other end(s) "are connected to a plurality of transducer units 30," which are further connected by wire to the user terminals. This would of course render Corbefin et al. inoperable for its intended purpose, which precludes a prima facie case of obviousness. M.P.E.P. § 2143.01.

Applicants also submit that the secondary Powell, Bickel et al., Mashida, and Hodge et al. references fail to overcome the deficiencies of Corbefin et al. and Sinivaara. In particular, none of these references disclose or suggest the feature of a signal pathway linking an external antenna to a cabin antenna, where at least a portion of the signal pathway includes a low energy transmission medium.

Because a combination of Corbefin et al. and Sinivaara fails to teach all of the elements of the presently claimed invention, Applicant submits that a prima facie case of obviousness does

not exist. More particularly, because the combination of Corbefin et al. and Sinivaara fails to teach the function of a signal pathway linking an external antenna to a cabin antenna, where at least a portion of the signal pathway includes a low energy transmission medium as recited by independent claims 1, 7, 15, and 23, the combination of Corbefin et al. and Sinivaara fails to render obvious the invention of these claims. Further, because each of claims 2-6, 8-14, 16-22, and 24 ultimately depends from one of these independent claims, the combination of Corbefin et al. and Sinivaara fails to render obvious the invention of these claims as well.

Moreover, Applicant notes that the Examiner has sought to combine together, with hindsight, a total of *four* or *five* references in an effort to reconstruct Applicant's invention of claims 4-6, 13-14, and 22. Applicant submits that it is unlikely that a person of ordinary skill in the art could have combined together so many references, even in the manner suggested by the Examiner. Thus, Applicant submits that claims 3, 7, 22 and 28 are also in condition for allowance for this reason.

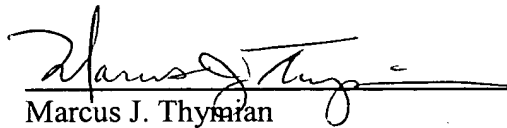
### **Conclusion**

In conclusion, Applicant respectfully requests favorable reconsideration and allowance of all pending claims 1-24.

Respectfully submitted,

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